

WHAT IS CLAIMED IS:

1. A computer implemented method of translating a textual input in a first language to a textual output in a second language, comprising:

generating an input logical form based on the textual input;
selecting a set of one or more of a plurality of matching transfer mappings in a transfer mapping database that match at least a portion of the input logical form, based on a predetermined metric;
combining the set of transfer mappings into a target logical form; and
generating the textual output based on the target logical form.

2. The method of claim 1 wherein the input logical form includes a plurality of input nodes and wherein selecting comprises:

selecting the set of transfer mappings based on a number of input nodes covered by the set of transfer mappings, collectively.

3. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on sizes of the plurality of matching transfer mappings.

4. The method of claim 3 wherein selecting comprises:

selecting the set of transfer mappings as a largest of the plurality of matching transfer mappings.

5. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on frequencies with which the plurality of matching transfer mappings were generated during a training phase used in training the transfer mapping database.

6. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on frequencies with which the plurality of matching transfer mappings were generated from completely aligned logical forms during a training phase used in training the transfer mapping database.

7. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on frequencies with which the plurality of matching transfer mappings were generated from partially aligned logical forms during

a training phase used in training the transfer mapping database.

8. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on frequencies with which the plurality of matching transfer mappings were generated from non-fitted parses of training data used to generate logical forms during a training phase used in training the transfer mapping database.

9. The method of claim 1 wherein selecting comprises:

selecting the set of transfer mappings based on a score associated with each of the plurality of matching transfer mappings, the score being indicative of a confidence in the transfer mapping with which it is associated.

10. The method of claim 1 wherein combining the set of transfer mappings comprises:

generating a linked logical form, indicative of links between the input logical form and logical forms in the transfer mapping database, based on the set of transfer mappings.

11. The method of claim 10 wherein combining further comprises:

generating a target logical form based on the linked logical form.

12. The method of claim 11 wherein generating the target logical form comprises:

accessing a bilingual dictionary based on words in the linked logical form.

13. The method of claim 11 wherein generating the textual output comprises:

generating the textual output based on the target logical form.

14. The method of claim 1 wherein selecting comprises:

selecting as the set a plurality of overlapping, matching transfer mappings.

15. The method of claim 14 wherein combining comprises:

combining the plurality of overlapping, matching transfer mappings to obtain the target logical form.

16. A machine translation system for translating a textual input in a first language to a textual output in a second language, the machine translation system comprising:

a matching component configured to match input logical forms generated based on the textual input to a set of one or more of a plurality of matching transfer mappings in a transfer mapping database that match at least a portion of the input logical form, based on a predetermined metric; and
a generation component configured to generate the textual output based on the selected transfer mappings.

17. The machine translation system of claim 16 and further comprising:

a logical form generator receiving the textual input and generating the input logical forms based on the textual input.

18. A machine translation system for translating a textual input in a first language to a textual output in a second language, the machine translation system comprising:

an input generator generating an input dependency structure based on the textual input;

a transfer mapping database including a plurality of transfer mapping dependency structures formed based on at least ten thousand parallel, aligned, training sentences;

a matching component configured to receive the input dependency structure and match it against a matching set of one or more of the transfer mapping dependency structures in the transfer mapping database; and
a generation component configured to generate the textual output based on the matching transfer mapping dependency structure.

19. The machine translation system of claim 18 wherein the transfer mapping database includes a plurality of transfer mapping dependency structures formed based on at least fifty thousand parallel, aligned, training sentences.

20. The machine translation system of claim 19 wherein the transfer mapping database includes a plurality of transfer mapping dependency structures formed based on at least one hundred thousand parallel, aligned, training sentences.

21. The machine translation system of claim 19 wherein the transfer mapping database includes a plurality of transfer mapping dependency structures formed based on at least one hundred eighty thousand parallel, aligned, training sentences.

22. The machine translation system of claim 19 wherein the transfer mapping database includes a plurality of transfer mapping dependency structures

formed based on at least two hundred thousand parallel, aligned, training sentences.

23. A computer implemented method of training a transfer mapping database, comprising:

receiving a plurality of parallel, aligned, pairs of input sentences in two different languages;

generating input logical forms for the input sentences in both languages, the input logical forms being shared across both languages; and

training the transfer mapping database based on the input logical forms.

24. The method of claim 23 wherein training comprises:

aligning the input logical forms to obtain transfer mappings; and

training the transfer mapping database based on the transfer mappings.

25. The method of claim 24 wherein training the transfer mapping database based on transfer mappings comprises:

training the transfer mapping database based only on transfer mappings obtained from the aligned logical forms at least a predetermined threshold number of times.

26. The method of claim 25 wherein the predetermined threshold number of times comprises two times.

27. The method of claim 23 wherein receiving comprises receiving at least ten thousand parallel, aligned, training sentences.

28. The method of claim 23 wherein receiving comprises receiving at least fifty thousand parallel, aligned, training sentences.

29. The method of claim 23 wherein receiving comprises receiving at least one hundred thousand parallel, aligned, training sentences.

30. The method of claim 23 wherein receiving comprises receiving at least one hundred eighty thousand parallel, aligned, training sentences.

31. The method of claim 23 wherein receiving comprises receiving at least two hundred thousand parallel, aligned, training sentences.

32. A computer implemented method of training a transfer mapping database, comprising:

receiving a plurality of parallel, aligned,
pairs of input sentences in two different
languages;

generating input logical forms for the input
sentences in both languages;

aligning the input logical forms to obtain
transfer mappings;
filtering the transfer mappings obtained; and
training the transfer mapping database based
only on the filtered transfer mappings.

33. The method of claim 32 wherein filtering the
transfer mappings comprises:

filtering transfer mappings obtained from the
aligned logical forms less than at least a
predetermined threshold number of times.

34. The method of claim 33 wherein filtering the
transfer mappings comprises:

filtering transfer mappings obtained from the
aligned logical forms less than at least
two times.